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08/346,040 11/29/94 MARISSETTY

B3M1/0126
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
7TH FLOOR
LOS ANGELES CA 90025

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EXAMINER	
TRAVIS, J	
ART UNIT	PAPER NUMBER
	2

DATE MAILED 1-50-95

01/26/96

Please find below a communication from the EXAMINER in charge of this application.

Commissioner of Patents

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Office Action Summary

Application No.

08/346,040

Applicant(s)

MARISSETTY

Examiner

JOHN TRAVIS

Group Art Unit

2305

☐ Responsive to communication(s) filed on _____☐ This action is FINAL.☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-20 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☒ Claim(s) 1-10 is/are allowed.☒ Claim(s) 11-20 is/are rejected.☐ Claim(s) _____ is/are objected to.☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.☒ The drawing(s) filed on 11-29-94 is/are objected to by the Examiner.☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.☒ The specification is objected to by the Examiner.☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been☐ received.☐ received in Application No. (Series Code/Serial Number) _____.☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____☐ Interview Summary, PTO-413☒ Notice of Draftsperson's Patent Drawing Review, PTO-948☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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Part III DETAILED ACTION

Drawings

1. The drawings are objected to because they do not include certain reference signs mentioned in the description. 37 CFR § 1.84(f) states, "Reference signs not mentioned in the description shall not appear in the drawing and vice versa." The following reference signs are not included in the drawings. Correction is required.

A. Figure 1 - The APM/PMC Device Driver is not labeled "103", as specified on page 14 line 12.

Specification

2. The disclosure is objected to because of the following informalities. Appropriate correction is required.

A. Page 13 line 11 - "label" should be "level".

Claim Rejections - 35 USC § 112

3. Claims 12-15 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is no antecedent basis for the "virtual device driver". Claims 12-15, which depend from claim 11, appear to be direct copies of claims 2-5, which depend from claim 1. But the

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term "virtual" only appears in claim 1, not in claim 11. For the purpose of applying prior art, Examiner has assumed that the word "virtual" should be omitted from claims 12-15 rather than added to claim 11.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

5. Claims 11 and 12 are rejected under 35 U.S.C. § 103 as being unpatentable over Smith et al. in view of Stewart.

Smith teaches a computer system in which the device drivers monitor for an idle condition and power down the various devices when such a condition is detected (column 9 lines 50-59). Smith does not specifically mention using timers to determine how much

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idle time is allowable, although the existence of such timers is implied by his methodology. But Stewart does specify the use of idle timers for each device (column 4 lines 64-68). It would have been obvious to a person of ordinary skill in the art at the time of the invention to have used the timers of Stewart in the system of Smith, to provide predictable time periods for the various timeout functions.

6. Claims 13 and 14 are rejected under 35 U.S.C. § 103 as being unpatentable over Smith et al. and Stewart as applied to claim 11 above, and further in view of Kardach et al.

Smith/Stewart do not specify the use of I/O trapping to detect activity or idle conditions. But Kardach specifies this technique in column 4 lines 39-59. Since he uses this trapping to generate interrupts, a trap handler is inherent in his operation. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have used the I/O trapping of Kardach in the system of Smith/Stewart, as this is a common method of detecting activity by I/O devices.

7. Claims 15-20 are rejected under 35 U.S.C. § 103 as being unpatentable over Smith et al. and Stewart as applied to claim 11 above, and further in view of Kardach et al. and Mattox.

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As to claim 15, as described above Kardach uses an interrupt trap handler to detect I/O activity and thereby determine idle conditions. He does not address whether interrupt chaining is used, leaving that decision to the designer's discretion. The use of chained interrupt handling has been used in the art for a number of years, whenever the system hardware or software architecture places restrictions on more common re-entrant programming techniques for handling nested interrupts. Mattox provides an example of the use of this method in column 9 lines 15-20. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have used the interrupt chaining of Mattox in the system of Smith/Stewart/Kardach, if the system hardware and/or software design required such techniques.

As to claims 16-20, the use of memory to store the indicated parameters is inherent in a software-based power control system such as that described by Smith/Stewart/Kardach. Without the flexibility provided by this approach, the various parameters would have to be hard-wired into the system, thus allowing only one possible configuration. This would be unacceptable to the computer market, which is heavily oriented towards flexibility and user configurability. The use of memory to provide each of the specified parameters would be obvious to a person of ordinary skill in the art for the following reasons:

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Claim 16: The system must know which devices are enabled so it will know what power control functions to apply in each case.

Claim 17: The system must know which events are being monitored so it will know what the appropriate timeout functions are.

Claim 18: The system must know what I/O address ranges are appropriate so it can monitor those address ranges through the aforementioned I/O traps.

Claim 19: The system must know activity levels so that each device can be moved through the appropriate power down stages.

Claim 20: The system must know what power management states are allowable before placing anything into those states.

Allowable Subject Matter

8. Claims 1-10 are allowable over the prior art of record.

9. The following is an Examiner's statement of reasons for the indication of allowable subject matter: Independent claim 1 is similar to claim 11, except that it specifies the use of *virtual* device drivers to provide power control over devices, instead of using the normal device drivers of claim 11. As virtual drivers have no permanent tie to specific hardware, their use in controlling power to specific hardware is considered a novel departure from normal methods of power control. No prior art

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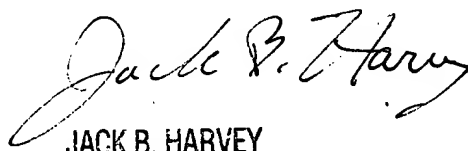
could be found, either singly or in combination, that would make this approach obvious. As claims 2-10 depend from claim 1, they too are allowable.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Travis whose telephone number is (703) 308-5212. The examiner can normally be reached on Monday-Friday from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey, can be reached at (703) 305-9705. The fax number for this group is (703) 308-5358.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.


JACK B. HARVEY
SUPERVISORY PATENT EXAMINER
GROUP 2300

JFT
January 18, 1996

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